United States Patent [19]

Dodge et al.

Patent Number: [11]

5,718,112

Date of Patent:

Feb. 17, 1998

[54] METHOD AND APPARATUS FOR THE DESTRUCTION OF VOLATILE ORGANIC **COMPOUNDS**

[75] Inventors: Paul R. Dodge, Mesa; Robert S.

McCarty, Phoenix, both of Ariz.; Doug Rogers, Visalia; Gail Rogers, San

Gabriel, both of Calif.

Assignee: AlliedSignal Inc., Morris Township,

N.J.

[21] Appl. No.: 704,417

[22] Filed: Jan. 12, 1996

Related U.S. Application Data

[62] Division of Ser. No. 538,692, Oct. 3, 1995, Pat. No. 5,592, 811.

...... F02G 3/00; F02B 43/00 [51] Int. Cl.6

[52] U.S. Cl. 60/39.02; 60/39.12; 60/39.27; 60/731; 60/733; 422/182; 431/5

... 60/39.02, 39.06, Field of Search ... 60/39.07, 39.12, 39.23, 39.27, 731, 733, 746, 760; 422/182, 183; 431/5, 353, 352

References Cited [56]

U.S. PATENT DOCUMENTS

.... 60/39.04 3,846,979 11/1974 Pfeffede ... 3,902,315 9/1975 Martin .

4.197.701	4/1980	Boyum .
4.236.464	12/1980	Anderson et al 110/238
4.864.811	9/1989	Pfefferle 60/39.06
5,108,717		Deller et al 422/171
5,212,943		Harris .
5.216.876	6/1993	Gabrielson .
5,524,599		Kong et al
5,547,337	8/1996	Fock et al

FOREIGN PATENT DOCUMENTS

0 298 941 11/1989 European Pat. Off. . WO 95/02450 1/1995 WIPO.

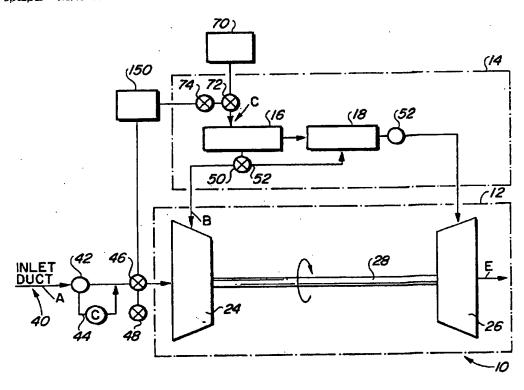
Primary Examiner-Charles G. Freay

Attorney, Agent, or Firm-Jerry J. Holden [57]

ABSTRACT .

A system for the destruction of volatile organic compounds while generating power. In a preferred embodiment the system comprises a combustor and a reaction chamber connected to an exit of the combustor. A primary inlet to the combustor supplies a primary fuel to the combustor. A secondary fuel, comprising air and an amount of one or more volatile organic compounds, is supplied to a compressor, which compresses the secondary fuel and directs the secondary fuel to the combustor and the reaction chamber. The system is suitably configured to enable the stoichiometric reaction of the two fuels in a manner sufficient to destroy the volatile organic compounds contained in the secondary fuel and power a turbine engine connected to an exit of the reaction chamber.

2 Claims, 5 Drawing Sheets



s = þ ap b 224 1